

## Tom J. Cajka

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**From:** Steve Martin <stevem@a-fan.org>  
**Sent:** Monday, August 19, 2019 3:57 PM  
**To:** John Hansen; Thomas Peterson; Christy Joy; Dale Softley; Marijane Hancock; Scott Johns; Steven Skoda; Theresa Pella; Tim Kalkowski  
**Cc:** Steve S. Henrichsen; Tom J. Cajka  
**Subject:** RE: A Poultry Grower's Guide to FSA loans

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi All, sorry this got a little long. Lots of good information out there to talk about odor and set-back distances.

The following link is to a survey that I think is interesting. It talks about the business of contract production. While this really has nothing to do with what we are supposed to do as a working group in making recommendations on how to site AFOs it is a good insight into the poultry world. (note – the National Chicken Council represents the integrators, not the farmers, still good info)

<https://www.nationalchickencouncil.org/wp-content/uploads/2016/04/Live-Chicken-Production-FARMECON-LLC-FINAL-April-2016.pdf>

The above study references this ERS-USDA study on the financial risks and income of contract broiler production. One thing to note is that, with the Costco project they do not have a tournament style pay system, they have a floor price that everyone receives and then a bonus structure for better performance (this would be similar to what contract hog growers receive, a base and then a bonus based on multiple factors).

<https://www.ers.usda.gov/amber-waves/2014/august/financial-risks-and-incomes-in-contract-broiler-production/>

Below are links to a couple of papers by UNL that talk about the value of using manure for fertilizer. There are lots of soil health and soil regeneration benefits to using manure. Including that organic nutrients don't leach as quickly as non-organic ones. When you look at waters of the state that do have nitrogen impacts, they are mainly in areas with few AFOs. Commercial fertilizer applications are not regulated by DEE and overapplication is possible, which could lead to leaching. There are also instances of high nitrates in ground water due to what is naturally happening in the earth in that location. All this doesn't mean that manure couldn't be an impact but we do need to recognize all the regulation that goes into how manure is handled and spread on fields. One other thought on this topic; in the recent flooding there was not one hog or poultry operation that had manure escape or get into waters of the state, the same can't be said for many municipal waste control facilities.

<https://water.unl.edu/article/animal-manure-management/manure-impact-erosion-and-runoff-0>

<https://water.unl.edu/article/manure-nutrient-management/how-can-animal-manure-help-my-soils-be-healthier-and-more>

Now some information that might help us with set-back distances. This study used laser spectrometers to identify ammonia molecules in the air on the down wind end of a tunnel ventilated broiler house (ammonia is the key odor molecule in poultry, where sulfur dioxide would be more of a concern with swine). The houses are very similar to what we have in Nebraska, just not as big, still the concept holds up. The introduction also talks about acceptable set-back distances in Georgia as being minimum of 500 feet, much less than what we are talking about. (1/4 mile or 1,320 feet)

<https://academic.oup.com/japr/article/18/3/630/880046>

Finally, if you look at the odor footprint tool developed by UNL it supports set-back distances of roughly ¼ mile as being 96% odor annoyance free. 96% of a day is 23 hours, so for 1 hour a day, on average, you could have an annoying level of

odor. That one hour could be in the middle of the night. It could be in the winter time when its too cold to be outside. It could also be in the summer time when

This is a 4 barn broiler operation like what LPP is proposing:

Type of facility:		Source Facility 1	Source Facility 2	Source Facility 3	Source Facility 4
		Poultry, Broiler Floor-raised on litter			
Total plan area:	(sq. ft.)	151,200			
Total number of animals:		190,000			
Base odor control:		No supplemental odor			
Percentage of total odor:		100%			
Alternate odor control:		No supplemental odor			
New Percentage of total odor:		100%			

  

		Separation Distance (miles)			
		Northeast	Southeast	Southwest	Northwest
<b>BASE PLAN</b>	90%	0.13	0.09	0.07	0.14
	94%	0.18	0.13	0.12	0.18
	96%	0.21	0.17	0.15	0.22
	98%	0.33	0.29	0.21	0.35
	99%	0.52	0.57	0.33	0.67
<b>ALTERNATE PLAN</b>	90%	0.13	0.09	0.07	0.14
	94%	0.18	0.13	0.12	0.18
	96%	0.21	0.17	0.15	0.22
	98%	0.33	0.29	0.21	0.35
	99%	0.52	0.57	0.33	0.67

And this is an 8 barn location:

Type of facility:		Source Facility 1	Source Facility 2	Source Facility 3	Source Facility 4
		Poultry, Broiler Floor-raised on litter			
Total plan area:	(sq. ft.)	302,400			
Total number of animals:		380,000			
Base odor control:		No supplemental odor			
Percentage of total odor:		100%			
Alternate odor control:		No supplemental odor			
New Percentage of total odor:		100%			

  

		Separation Distance (miles)			
		Northeast	Southeast	Southwest	Northwest
<b>BASE PLAN</b>	90%	0.20	0.12	0.09	0.20
	94%	0.26	0.19	0.16	0.26
	96%	0.31	0.24	0.22	0.32
	98%	0.49	0.42	0.31	0.52
	99%	0.77	0.85	0.46	1.01
<b>ALTERNATE PLAN</b>	90%	0.20	0.12	0.09	0.20
	94%	0.26	0.19	0.16	0.26
	96%	0.31	0.24	0.22	0.32
	98%	0.49	0.42	0.31	0.52
	99%	0.77	0.85	0.46	1.01

This is a normal sized deep pit swine finishing barn, 2,490 head which makes it a medium facility, roughly 990 animal units.

Type of facility:		Source Facility 1	Source Facility 2	Source Facility 3	Source Facility 4
		Swine, Finishing Bldg Deep pit Fin			
Total plan area:	(sq. ft.)	20,000			
Total number of animals:		2,490			
Base odor control:		No supplemental odor			
Percentage of total odor:		100%			
Alternate odor control:		No supplemental odor			
New Percentage of total odor:		100%			

  

		Separation Distance (miles)			
		North	East	South	West
<b>BASE PLAN</b>	90%	0.23	0.05	0.12	0.13
	94%	0.29	0.12	0.20	0.19
	96%	0.35	0.18	0.25	0.24
	98%	0.48	0.30	0.35	0.36
	99%	0.70	0.53	0.52	0.54
<b>ALTERNATE PLAN</b>	90%	0.23	0.05	0.12	0.13
	94%	0.29	0.12	0.20	0.19
	96%	0.35	0.18	0.25	0.24
	98%	0.48	0.30	0.35	0.36
	99%	0.70	0.53	0.52	0.54

At 96% both the hog finishing barn and 4 barn poultry site are supported at a ¼ mile set-back with no odor control. Even at 99% annoyance free, a setback of a ½ mile is supported in the 4 barn set, 3 out of 4 directions for the hog barn and for 98% annoyance free on the 8 barn location. 99% annoyance free would be 15 minutes per day. Since these are ag projects in the ag zone it seems reasonable to expect some impact if you choose to live in that zone. (note – the OFT doesn't work for open lot cattle operations)

Sorry to throw so much stuff out there. Enjoy!

Steve

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**From:** John Hansen <[john@nebraskafarmersunion.org](mailto:john@nebraskafarmersunion.org)>  
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**Subject:** RE: A Poultry Grower's Guide to FSA loans

Paula,

Thanks for the note. I think the economic benefits of the contract poultry system are a relevant consideration as we consider the conflict of uses in rural areas. Proponents often and still claim the economic benefits to contract producers as a reason to encourage more contract production and the CAFOs tied to it. The historic track record says otherwise. The primary economic beneficiaries of vertically integrated livestock production are the processors. Like they say, “Follow the money.”

Organizations like RAFI (Rural Advancement Foundation International) that provide services to contract producers in the Broiler Belt are a source of good information and insight. They have a crisis hotline used primarily for contract poultry producers for a reason. Do producers willingly sign poultry contracts? Yes. Do they fully understand what those contract provisions mean? No. Are they bound to them anyway? Yes.

Thanks to the massive scope of the COSTCO investment, Nebraska will be transformed from a lower tier poultry grower state to a major grower state in a matter of a few years. There is both opportunity and challenge with the size of that investment. Given the size and scope of that development, there will be corresponding impacts on our ground and surface water, and the quality of life in rural communities to be considered. To date, we have not discussed size limits, concentration levels, or given much thought to ways to monitor and track the overall impact of high levels of CAFO development on ground or surface water.

Lancaster County's current wide open approach to CAFO development is why we are now dealing with this issue. It was the judgement of the County Commissioners and County Planning and Zoning Committee that Lancaster County was not well prepared for this new reality, and that is why our CAFO Task Force was authorized and given our task.

While massive poultry contract production is new to Nebraska, it is not to the southeast US known as the Broiler Belt. We can benefit and learn from their years of experience with contract poultry production if we so choose. There is no need to repeat known mistakes. Since I represent farmers, I find the “Poultry Growers Guide to FSA Loans” useful because it comes from the producer perspective. I think it is always a good idea to “walk all the way around the elephant” to better determine what nature of beast it is. ☺